



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/092,382	03/05/2002	Derek I. Finch	58937/131	8455

27433 7590 07/26/2004

FOLEY & LARDNER
321 NORTH CLARK STREET
SUITE 2800
CHICAGO, IL 60610-4764

EXAMINER

DUONG, THO V

ART UNIT PAPER NUMBER

3743

DATE MAILED: 07/26/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/092,382

Applicant(s)

FINCH ET AL.

Examiner

Tho v Duong

Art Unit

3743

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 22 April 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-31 is/are pending in the application.
- 4a) Of the above claim(s) 3,8-11,14,18,21 and 26-31 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,2,4,5,7,12,15-17,19,20,22,24 and 25 is/are rejected.
- 7) ☒ Claim(s) 6,13 and 23 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 13 May 2002 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Receipt of applicant's amendment filed 4/22/2004 is acknowledged. Claims 1-25 are now pending. Claims 3,8-11,14,18,21 and 26-31 remain withdrawn from further consideration.

In view of applicant's argument about the 112th rejection, the previous 112th rejection has been withdrawn.

Response to Arguments

Applicant's arguments filed 4/22/2004 have been fully considered but they are not persuasive. In response to applicant's argument that the references fail to show certain features of applicant's invention, it is noted that the features upon which applicant relies (i.e., a flange is an integral portion of any part of a boss and the present invention relates to a boss which is part of the connecting grid) are not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

Furthermore, the examiner now interprets the claim as broadly as their terms reasonably allow. Specifically, the term "flange" is now interpreted as "a rim for attachment to another object" (Merriam Webster's Collegiate Dictionary 10th)

Drawings

The drawings are objected to as failing to comply with 37 CFR 1.84(p)(4) because reference character "504" has been used to designate both the plate and the opening (see page 13, at lines 22,25 and page 14, at line 8 in the specification). Corrected drawing sheets are required in reply to the Office action to avoid abandonment of the application. Any amended replacement

Art Unit: 3743

drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claim 20 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. The claimed subject matter of "the fluid connector provides a pair an inlet/outlet connection to both side of the connecting grid" renders the scope of the claim indefinite since it is not clear how one fluid connector can be on both side of the connecting grid. It appears in the figures that each side of the connecting grid possesses a fluid connector.

Claim 20 is further rejected as can be best understood by the examiner in which the examiner assumes that the applicant is claiming there are more than one fluid connectors and that the fluid connectors connect to two different sides of the connecting grid.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1,2,15,16,19,24 and 25 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Chevallier. Chevallier discloses (figures 1,4, figure A as bellow, and column 3, lines 55-57) a heat exchanger comprising a plurality of heat transfer plates (14) stacked together such that a plurality of fluid channels are provided there between the plates (12); at least one connecting grid comprises a pair of plates (20,22) separating the plurality of heat transfer plates into upper group of heat transfer plate and lower group of heat transfer plate (14), and at least one fluid connector (28) in fluid communication with a fluid channel via the connecting grid (18,20,22); the connector (28) comprising a tubular body having an outwardly directed flange formed integrally from a wall of the tubular body to form a fluid tight connection with the connecting grid by deforming an end portion of the tubular body. (See Figure A) Chevallier further discloses (figure 1) the connector (28) provides an inlet/outlet connection on one side of the connecting grid externally of the heat exchanger and connected to both plates (20,22) of the connecting grid. As regarding claim 24, Chevallier does not disclose that the nominal diameter to wall thickness ratio of the tubular body is within 20 to 70. Applicant has not disclosed that having this typically range solves any stated problem, or is for any particular purpose or there is any criticality for selecting this range. Moreover, it appears that the fluid connector would perform equally well with the ratio that

Art Unit: 3743

shown in Figure 4 of Chevallier. Accordingly, the use of this range is deemed to be a design consideration which fails to patentably distinguish over the prior art of Chevallier. In re Aller, 105 USPQ 233.

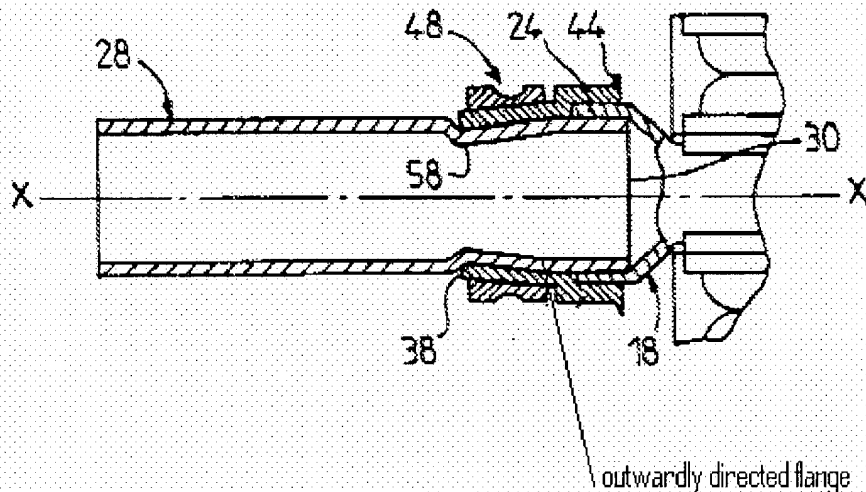


Figure A: The modified figure corresponds to figure 4 with the flange shown.

Claims 1,2,4,5,7,12,15,16,17,20,22,24 and 25 rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Quisenberry et al. (US 5,561,981). Quisenberry discloses (figures 1-3) a heat exchanger comprising a plurality of heat transfer plates (22) stacked together such that a plurality of fluid channels are provided there between, at least one connecting grid (108) comprising a pair of plates (90,96) separating the plurality of heat transfer plates into groups of heat transfer plates; at least one fluid connector

Art Unit: 3743

(35) in fluid communication with a fluid channel (102) via the connecting grid; the connector (35) provides an inlet/outlet connection externally of the heat exchanger; both side of the connecting grid are equipped with fluid connectors (33,35); and one side of the connecting grid is closed (longer side) and the other side is opened with apertures (104,106). Quisenberry further discloses (figure 3) that the connector body comprising a tubular body having a threaded structure formed at the end of the tubular body. The threaded structure formed at the end of the tubular body is considered to read on an outwardly directed flange as claimed. Quisenberry further discloses (figure 3) that an aperture (106) of the connecting grid equipped with a structural ring (corresponding threaded structure formed inside the aperture) received in the aperture (106) in a plate (96) of the connecting grid wherein the structural ring has an opening coaxial with the aperture to form a fluid tight connection between the flange of the tubular body. As regarding claim 12, when the fluid connector (35) is threaded on to the threaded surface of the aperture (106), a fluid tight connection is established by a seal between two threaded surfaces. As regarding claim 24, Quisenberry does not disclose that the nominal diameter to wall thickness ratio of the tubular body is within 20 to 70. Applicant has not disclosed that having this typically range solves any stated problem, or is for any particular purpose or there is any criticality for selecting this range. Moreover, it appears that the fluid connector would perform equally well with the Quisenberry's ratio. Accordingly, the use of this range is deemed to be a design consideration, which fails to patentably distinguish over the prior art of Quisenberry. In re Aller, 105 USPQ 233. As regarding claim 2, the method of forming the device (by deforming an end portion of the tubular) is not germane to the issue of patentability of the device itself. "Even though product-by-process claims are limited by and defined by the process, determination of

Art Unit: 3743

patentability is based on the product itself. The patentability of a product does not depend on its method of production. If the product in the product-by-process claim is the same as or obvious from a product of the prior art, the claim is unpatentable even though the prior product was made by a different process.” In re Thorpe, 777 F.2d 695, 698, 227 USPQ 964, 966 (Fed. Cir. 1985). In this instant case, Quisenberry’s product is considered to be the same as or obvious from the product in the product-by-process claim.

Allowable Subject Matter

Claims 6,13 and 23 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Bathla (US 5,390,732) discloses a clamping apparatus for heat exchanger plates.

Mauterer (US 5,590,707) discloses a heat exchanger comprising a plurality of group of heat transfer plates.

Any inquiry concerning this communication or earlier communication from the examiner should be directed to Tho Duong whose telephone number is (703) 305-0768. The examiner can normally be reached on from 9:30-6 PM.

Art Unit: 3743

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Henry Bennet, can be reached on (703) 308-0101. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0861.



TD

July 25, 2004



Tho Duong

Patent Examiner.